AMENDMENTS IN THE CLAIMS

Please amend claims 2, 27, 36 and 37 as follows this amendment:

1. (Previously canceled)

2. (Currently Amended) An ink-jet printhead, comprising:

a substrate being a single integrated monolithic and homogenous unit of silicon, said substrate, having a rear surface, said rear surface having a channel having a predetermined depth, wherein a plurality of ink feed holes are formed on a bottom of the channel perforating said substrate;

a nozzle plate directly coupled to a front surface of the substrate, said nozzle plate being perforated by a plurality of chamber-orifice complex holes, wherein each chamber-orifice complex hole corresponds to at least one of said plurality ink feed holes; and

a plurality of heaters disposed on the front surface of the substrate, each one of said plurality of heaters being located near corresponding ones of said plurality of chamber-orifice complex holes, wherein each one of said plurality of ink feed holes is formed at a center portion of a corresponding one of said plurality of chamber-orifice complex holes, and each one of said plurality of said heaters surrounds corresponding ones of said plurality of ink feed holes.

3. (Original) The ink-jet printhead of claim 2, wherein each one of said plurality of heaters is of an omega shape that surrounds said corresponding ink feed hole.

4-5. (Previously canceled)

6. (Original) The ink-jet printhead of claim 2, wherein each chamber-orifice has a truncated conical shape, wherein a lower end of said chamber orifice facing said substrate faces the corresponding ink feed hole and heater formed on the substrate and the other end having a smaller diameter faces toward an outside of said ink-jet printhead.

7-8. (Previously canceled)

9. (Original) The ink-jet printhead of claim 2, wherein said substrate comprises two channels in parallel with each other.

10-22. (Previously canceled)

23. (Previously amended) A method for mass production of a large number of printheads, comprising the steps of:

etching a channel into a bottom side of a silicon substrate;

etching a plurality of holes on a bottom of said channel of said substrate to perforate said substrate;

depositing a first plurality of signal lines and a second plurality of signal lines on a front side of said silicon substrate, each one of said first plurality of signal lines terminating near

termination points of corresponding ones of said second plurality of signal lines, each of said terminating portions of said first and said second signal lines terminating near at least one of said plurality of holes perforating said substrate;

depositing a resistive material so as to connect terminating ends of each one of said first plurality of signal lines with corresponding ones of said plurality of second plurality of signal lines, said resistive material being near at least one of said plurality of holes perforating said substrate; and

attaching a nozzle plate perforated by a plurality of nozzle holes onto said front side of said substrate so that each one of said plurality of nozzle holes is aligned to corresponding ones of terminating ends of said first and said second signal lines, said resistive material, and at least one of said plurality of holes perforating said substrate.

24. (Original) The method of claim 23, wherein said resistive material is essentially omega in shape and surrounds corresponding ones of said plurality of holes perforating said substrate.

25. (Original) The method of claim 23, wherein said plurality of holes perforating said substrate occur in pairs so that corresponding ones of said first and said second signal lines terminate in the vicinity of a pair of holes perforating said substrate, wherein each one of said plurality of nozzle holes is positioned over said pair of holes perforating said substrate.

26. (Previously canceled)

27. (Currently amended) An ink-jet printhead, comprising:

a substrate being a single integrated monolithic and homogenous unit of silicon, said substrate, having a rear surface, said rear surface having a channel having a predetermined depth, wherein a plurality of ink feed holes are formed on a bottom of the channel perforating said substrate;

a nozzle plate coupled to a front surface of the substrate, said nozzle plate being perforated by a plurality of chamber-orifice complex holes, wherein each chamber-orifice complex hole corresponds to at least one of said plurality ink feed holes; and

a plurality of heaters disposed on the front surface of the substrate, each one of said plurality of heaters being located near corresponding ones of said plurality of chamber-orifice complex holes, said nozzle plate being a single integrated monolithic and homogenous unit, each chamber-orifice hole having a cylindrical shaped portion on a portion of said chamber-orifice hole closest to a side of said nozzle plate that attaches to said substrate and a conical shaped portion on a portion of said chamber-orifice hole closest to a side of said nozzle plate opposite from where said nozzle plate attaches to said front surface of said substrate, said conical shaped portion being a section of a right circular cone with an axis perpendicular to said front surface of said substrate and perpendicular to said surfaces of said nozzle plate,

said ink-jet printhead being manufactured by a process geared for mass production, said process comprising the steps of:

etching said channel into a rear surface of said substrate;

etching a plurality of holes through to said front surface of said substrate to perforate said substrate;

depositing a first plurality of signal lines and a second plurality of signal lines on said front surface of said substrate, each one of said first plurality of signal lines terminating near termination points of corresponding ones of said second plurality of signal lines, each of said terminating portions of said first and said second signal lines terminating near at least one of said plurality of holes perforating said front surface of said substrate;

depositing said heaters made of a resistive material onto said front surface of said substrate so as to said connect terminating ends of each one of said first plurality of signal lines with corresponding terminating ends of said second plurality of signal lines, said resistive material being near to at least one of said plurality of holes perforating said front surface of said substrate; and

attaching said nozzle plate perforated by said plurality of nozzle holes onto said front surface of said substrate so that each one of said plurality of nozzle holes is aligned to corresponding ones of terminating ends of said first and said second signal lines, said resistive material, and at least one of said plurality of holes perforating said front surface of said substrate, said resistive material being essentially omega in shape and surrounding corresponding ones of said plurality of holes perforating said front surface of said substrate.

28-35. (Previously canceled)

36. (Currently Amended) The ink-jet printhead of claim 2, said nozzle plate being a single integrated monolithic and homogenous unit, each chamber-orifice hole having a cylindrical shaped portion on a portion of said chamber-orifice hole closest to a side of said nozzle plate ~~where said nozzle plate~~ that attaches to said ~~front surface of said~~ substrate and a conical shaped portion on a portion of said chamber-orifice hole closest to a side of said nozzle plate opposite from where said nozzle plate attaches to said front surface of said substrate.

37. (Currently Amended) The ink-jet printhead of claim 36, said cylindrical shaped portion of each chamber-orifice hole ~~being~~ having an axis that is perpendicular to said front surface of said substrate and perpendicular to surfaces of said nozzle plate.